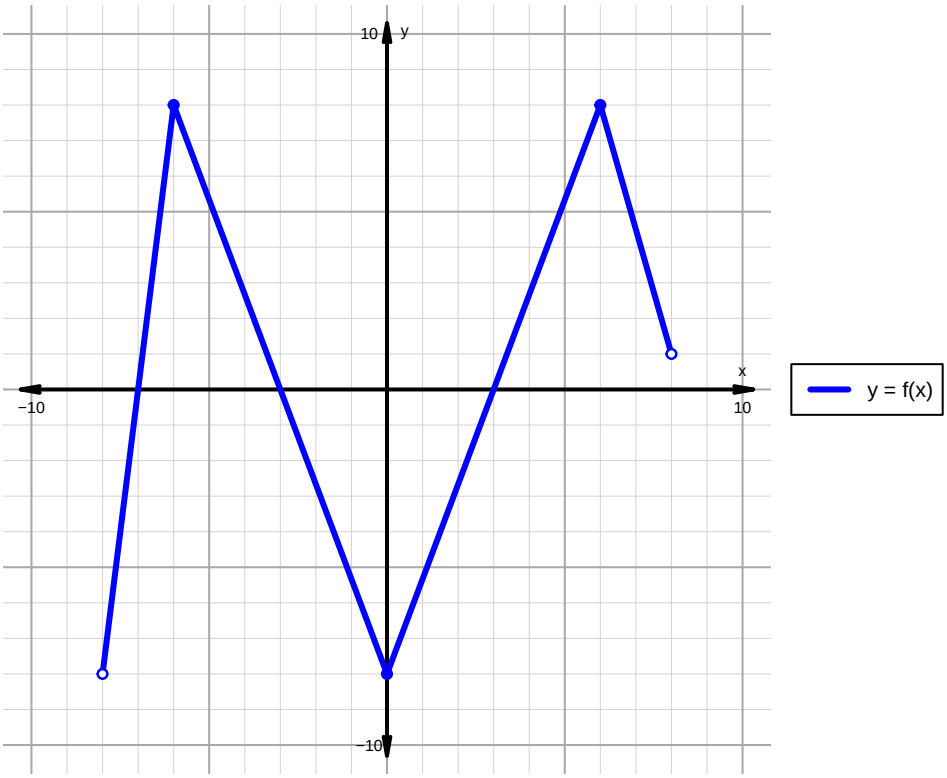
Name: Date:

Intervals, Transformations, and Slope Solution (version 1)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-7,-3)\cup(3,8)$
Negative	$(-8,-7)\cup(-3,3)$
Increasing	$(-8,-6)\cup(0,6)$
Decreasing	$(-6,0)\cup(6,8)$
Domain	$(-8,8)$
Range	$(-8,8)$

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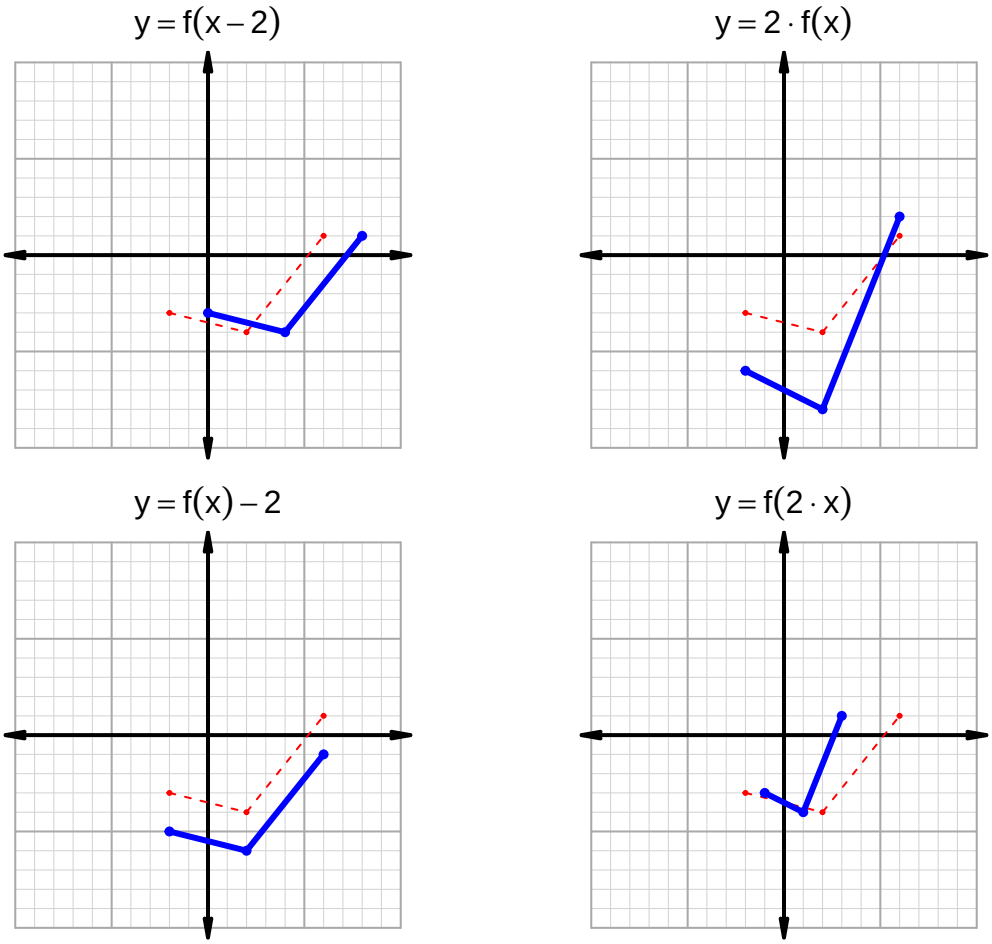
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 32$ and $x_2 = 95$. Express your answer as a reduced fraction.

x	$g(x)$
32	74
47	32
74	95
95	47

$\frac{f(95)-f(32)}{95-32} = \frac{47-74}{95-32} = \frac{-27}{63}$

The greatest common factor of -27 and 63 is 9. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-3}{7}$$